

Prototypical Grade Crossing Controller Parts List (PGCC Rev B)
(In recommended order of assembly)

Qty.	Symbol	Description
11	–	4-40 x 1/4" long pan head machine screws (Mouser 534-9300)
11	–	4-40 hex nuts (Mouser 534-9600)
12	R1-R12	10K Ω resistors [brown-black-orange]
9	R13-R21	1.0K Ω resistors [brown-black-red]
3	R22-R24	100K Ω resistors [brown-black-yellow]
1	R25	82K Ω resistor [gray-red-orange]
1	R26	22K Ω resistor [red-red-orange]
2	R27, R28	1.0K Ω resistors [brown-black-red]
1	R29	91K Ω resistor [white-brown-orange]
2	R30, R31	470 Ω resistors [yellow-violet-brown]
1	R32	4.7K Ω resistor [yellow-violet-red]
2	R33, R34	1.0 Ω resistors [brown-black-gold]
2	R35, R36	100 Ω 1/2W resistors [brown-black-brown] - see text for alternates
13	D1-D13	1N4148 switching diodes (Jameco 743293)
6	S1-S6	14-pin DIP sockets (Jameco 112214)
1	S7	8-pin DIP socket (Jameco 112206)
1	S8	28-pin DIP socket .6" spacing w/open frame (Jameco 112272)
1	V1	7805T 5V, 1A positive voltage regulator (Jameco 51262)
1	SW1	4-segment DIP switch (Digi-Key CT2064)
12	C1-C12	.1 μ F monolithic capacitors (Jameco 332672)
8	C13-C20	10 μ F, 25V tantalum capacitors (Jameco 94078)
1	C21	.47 μ F, 350V tantalum capacitor (Jameco 33533)
1	C22	.1 μ F, 35V tantalum capacitor (Jameco 33486)
2	C23, C24	10 μ F, 100V radial aluminum electrolytic capacitors (Jameco 199049)
1	C25	.01 μ F monolithic capacitor (Jameco 332646)
3	P1-P3	1M Ω trim potentiometers (Digi-Key 3306F-105)
1	P4	200 Ω trim potentiometer (Digi-Key 3306F-201 or Mouser 652-3306F-1-201)
3	P5-P7	2K Ω trim potentiometers (Digi-Key 3306F-202 or Mouser 652-3306F-1-202) -see text for higher wattage alternatives for P6 and P7
1	Q1	2N6037 Darlington NPN power transistor (Mouser 610-2N6037)
3	Q2, Q4	2N4403 PNP small signal transistors (Jameco 38447)
1	U1, U2	LM324N quad op amps (Jameco 23683)
1	U3	CD4071 CMOS quad 2-input OR gate (Jameco 13274)
2	U4-U5	CD4011 CMOS quad 2-input NAND gates (Jameco 12634)
1	U6	CD4069 CMOS hex inverter (Jameco 13231)
1	U7	L272M dual .7A output op amp (Mouser 511-L272M)
1	U8	Preprogrammed crossing bell sound IC (ITT PGCCB – see text)
1	SPK1	2-in, 8 Ω Speaker (Jameco 135693)

Author's recommendations for suppliers given in parentheses above with part numbers where applicable. Equivalent parts may be substituted. Resistors are 1/4W, 5 percent, except R35 and R36 which are 1/2W, with color codes given in brackets.